WHAT IS CLAIMED IS:

		1	1.	A part measurement system comprising:
		2		a press machine including a lower die coupled to an upper die, wherein the
		3		lower die includes a top surface supporting a strip of material to be formed into a
		4		part after a stripper plate coupled to the upper die contacts the strip of material;
		5		a part measurement sensor located in the lower die, wherein the sensor
		6		measures a critical dimension of the part while the part is in the lower die;
	CXX	7		a part forming rail coupled to the lower die, wherein the forming rail and
	90), 8		the upper die form the critical dimension of the part; and
		9		a press controller coupled to the press machine and the sensor, wherein the
		10		controller processes a measurement signal from the part measurement sensor of
	And their that their teat	11		the critical dimension of the part, compares the measurement signal to a
	gi III	12		predetermined threshold value, and generates a command signal to the press
		13		machine to adjust the forming rail based on the measurement signal.
	i= i			
	::1			
		1	2.	The measurement system according to claim 1, wherein the forming rail is
		1 2	2.	The measurement system according to claim 1, wherein the forming rail is coupled to a servo and the press controller adjusts the servo based on the
			2.	
		2	2.	coupled to a servo and the press controller adjusts the servo based on the
	: 45 J	2	2.	coupled to a servo and the press controller adjusts the servo based on the
		2 3		coupled to a servo and the press controller adjusts the servo based on the measurement from the sensor of the critical dimension of the part.
		2 3		coupled to a servo and the piess controller adjusts the servo based on the measurement from the sensor of the critical dimension of the part. The measurement system according to claim 2, wherein the upper die includes a
		2 3		coupled to a servo and the piess controller adjusts the servo based on the measurement from the sensor of the critical dimension of the part. The measurement system according to claim 2, wherein the upper die includes a
		2 3 1 2	3.	coupled to a servo and the piess controller adjusts the servo based on the measurement from the sensor of the critical dimension of the part. The measurement system according to claim 2, wherein the upper die includes a knocker that contacts the forming rail to form the critical dimension of the part.
		2 3 1 2	3.	coupled to a servo and the piess controller adjusts the servo based on the measurement from the sensor of the critical dimension of the part. The measurement system according to claim 2, wherein the upper die includes a knocker that contacts the forming rail to form the critical dimension of the part. The measurement system to claim 1, wherein the sensor is an analog output
		2 3 1 2	3.	coupled to a servo and the piess controller adjusts the servo based on the measurement from the sensor of the critical dimension of the part. The measurement system according to claim 2, wherein the upper die includes a knocker that contacts the forming rail to form the critical dimension of the part. The measurement system to claim 1, wherein the sensor is an analog output
		2 3 1 2	3.4.	coupled to a servo and the press controller adjusts the servo based on the measurement from the sensor of the critical dimension of the part. The measurement system according to claim 2, wherein the upper die includes a knocker that contacts the forming rail to form the critical dimension of the part. The measurement system to claim 1, wherein the sensor is an analog output proximity switch located in the lower die.

Dkt. No.: 2.068 (00AB143)

		1	6.	The measurement system according to claim 5, wherein the sensor generates a
		2		first measurement signal prior to the upper die punching the strip of material and a
		3		second measurement signal after the upper die punches the strip of material
_				
		1	7.	The measurement system according to claim 6, wherein the press controller
	511	\mathcal{Y}_{k}		generates an average measurement signal based on the first measurement signal
	7	\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'\'		and the second measurement signal.
_				
		1	8.	The measurement system according to claim 7, wherein the press controller
		2		compares the average measurement signal to the predetermined threshold to
		3		determine whether to adjust the forming rail.
	[] :/1	1	92	The measurement system according to claim 6, wherein the sensor generates the
	91 91	₂ C	The state of	first measurement signal when the press machine is between 130 degrees and 150
	than most and that the	3		degrees.
		1		
	Mrs. Mar. 18	1	10.	The measurement system according to claim 9, wherein the sensor generates the
	: []	2		second measurement signal when the press machine is between 180 degrees and
	7	3		360 degrees.
	=: =:			
		1	11.	A part measurement system comprising:
		2		a press machine including a lower die coupled to an upper die, wherein the
		3		lower die includes a top surface supporting a strip of material to be formed into a
		4		part after a stripper plate coupled to the upper die contacts the strip of material;
		5		a part measurement sensor located in the lower die, wherein the sensor
	•	0 6 ,		measures a critical dimension of the part;
		, }		a part forming fail coupled to the lower die, wherein the forming rail and
		\mathcal{O}_8^8		the upper die form the critical dimension of the part; and
		9		a press controller coupled to the press machine and the sensor, wherein the
		10		controller processes a measurement signal from the part measurement sensor of
		11		the critical dimension of the part, compares the measurement signal to a



predetermined threshold value, and generates a command signa machine to adjust the forming rail based on the measurement si	_
1 12. The measurement system according to claim 11, wherein the se	nsor measures the
2 critical dimension of the part while the part is in the lower die.	
1 13. The measurement system according to claim 12, wherein the fo	rming rail is
2 coupled to a servo and the press controller adjusts the servo bas	ed on the
3 measurement from the sensor of the critical dimension of the pa	art.
1 14. The measurement system according to claim 13, wherein the up	pper die includes a
2 knocker that contacts the forming rail to form the critical dimen	sion of the part.
1 15. The measurement system to claim 11, wherein the sensor is an	analog output
The measurement system to claim 11, wherein the sensor is an proximity switch located in the lower die.	
i _d i	
· · · · · · · · · · · · · · · · · · ·	ess machine is a
progressive punch press.	
1 17. The measurement system according to claim 16, wherein the se	nsor generates a
The measurement system according to claim 16, wherein the set of the upper die punching the stripe in the upper die punching the	ip of material and a
3 second measurement signal after the upper die punches the strip	
5 Second measurement pignar arter the apper are pullenes the strip	/ V. 11100V11011
	. 11
1 18. The measurement system according to claim 17, wherein the pr	
2 generates an average measurement signal based on the first mea	asurement signal
and the second measurement signal.	
1 19. The measurement system according to claim 18, wherein the pr	ess controller
2 compares the average measurement signal to the predetermined	threshold to
determine whether to adjust the forming rail.	

	1	20.	The measurement system according to claim 19, wherein the sensor generates the
	2		first measurement signal when the press machine is between 130 degrees and 150
	3		degrees.
	1		
	1	21.	The measurement system according to claim 20, wherein the sensor generates the
	2		second measurement signal when the press machine is between 180 degrees and
	3		360 degrees.
 	1	22.	A method of measuring a critical dimension of a part in a press machine, the
	2		method including the steps of:
	3		feeding a strip of material through the press machine, wherein the machine
	4		includes a lower die coupled to an upper die and the lower die includes a top
	5		surface supporting the strip of material;
of the bound that the bound that the bound that the bear the bear that the bear that the bear that the bear that the bear the b	6		forming the strip of material into the part, wherein a stripper plate coupled
	7	ς \Q	to the upper die contacts the strip of material and the upper die punches the strip
	8	2000	of material;
	9	U	measuring the critical dimension of the part with a part measurement
	10		sensor located in the lower die;
H. H. H. H. G., G., P. D. B. iii.	11		processing a measurement signal from the part measurement sensor of the
	12		critical dimension of the part, wherein a press controller compares the
	13		measurement signal to a predetermined threshold value, and generates a command
	14		signal to the press machine; and
	15		adjusting a forming rail coupled to the lower die based on the command
 	16		signal from the press controller.
 			
	1	23.	The method according to claim 22, wherein the forming rail is coupled to a servo
	2		and the press controller adjusts the servo based on the measurement from the
	3		sensor of the critical dimension of the part.
	1	24.	The method according to claim 23, wherein the upper die includes a knocker that
 	2		contacts the forming rail to form the critical dimension of the part.

		1	25.	The method according to claim 22, wherein the sensor is an analog output
		2		proximity switch located in the lower die.
		1	26.	The method according to claim 22, wherein the press machine is a progressive
		2		punch press.
				0 /
		1	27.	The method according to claim 26, wherein the sensor generates a first
		2		measurement signal prior to the upper die punching the strip of material and a
		3	· · · · · · · · · · · · · · · · · · ·	second measurement signal after the upper die punches the strip of material.
	i== ₽	1	28.	The method according to claim 27, wherein the press controller generates an
		2		average measurement signal based on the first measurement signal and the second
	a) ² Hen III aan taan taan taal Hen Hall teen taat 17 taan meli meli teet taat taat	3		measurement signal.
	111			
	<u>1</u>	1	29.	The method according to claim 28, wherein the press controller compares the
		2		average measurement signal to the predetermined threshold to determine whether
		3		to adjust the forming rail.
	121			
	-1	1	30.	The method according to claim 29, wherein the sensor generates the first
	H. H. H. T. T. Van Vand Bart.	2		measurement signal when the press machine is between 130 degrees and 150
		3		degrees.
		1		
		1	31.	The method according to claim 30, wherein the sensor generates the second
		2		measurement signal when the press machine is between 180 degrees and 360
		3		degrees.
		,	\)	
		Δ	V	
		', 7)`	
	م	903		
		Y		
	V	,		